Exploring the Evolution of Energy: 
A History of Michigan State University Energy Use

Introduction

The MSU Campus Archaeology program (CAP) is dedicated to investigating the evolution of higher education through the study of archaeological and historic evidence. As an intern for CAP I was responsible for developing a research project related to campus history and choose to focus on the evolution of energy use from the college’s creation to the present.

Methodology

Archives

The University Archives and Historical Collections have resulted in the majority of my primary resources, especially concerning the earliest years of the campus and include documents, maps, photographs, and correspondence. Many official college contracts, orders, and correspondence concerning the building of power facilities and the purchase of machinery exist. Although these documents provide great detail, they vary in type and time period so finding information on each phase is not certain.

Historical Sources

Several informative histories on the development of campus have been written. Including:

• From an Oak Opening by Harold Launius
• Michigan State: The First Hundred Years, by campus historian Madonna Kahn

This information can be difficult to interpret. Since the names of uses of buildings have evolved over time, references to buildings can include a new structure, an addition, or a preexisting building being referred to by a different name.

Archaeology

From the material evidence we can recognize transitions in the technological methods of energy, including heating and lighting. For example, CAP has recovered:

• coal and cinders (remnants of coal)
• tarpaulin lightbulbs
• stove pipes

My research was based mostly on historical and archival sources but in supplemented by archaeological evidence.

Problem

CAP organizes campus history into four distinct phases.

The four periods include:

• Phase I 1855-1900
• Phase II 1900-1924
• Phase III 1925-1955
• Phase IV 1955-present

These periods are characterized by shifts in campus landscapes, purpose and population, and contain specific evidence for various energy resources and uses.

Using these four historical time periods I investigated the impact of campus growth on energy, and the consequences of particular systems. I was especially concerned with the chronology of campus power structures, the introduction of utilities such as electricity, and variations of fuel requirements or sources.

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Conclusion

Based on my research the four phases of campus history can be summarized by these energy characteristics:

• Phase I: Initial use of wood fuel with a transition to coal producing steam power and heat.
• Phase II: Increased rates of coal power plant construction and additions
• Phase III: Campus energy becomes self-sufficient with construction of Shaw Lane Power Plant
• Phase IV: Coal remains chief fuel source, energy demands continue to increase.

Conclusion

Historical and archaeological evidence reveal that energy has and continues to play a vital role in the growth and development of the university. Energy capacities determined the construction of buildings or the allowed enrollment rate. Yet energy is also impacted by these factors. Renovations and additions to energy facilities have been continuously implemented to meet rising energy demands. Researching past energy methods can provide a greater understanding of the history of MSU as well as valuable information for future energy use on campus.

Future Directions

Although methods and sources have been slow to change, the future may hold a change in direction. MSU has been investigating and experimenting with renewable energy sources such as:

• solar energy
• biomass fuels, such as plant byproducts
• geothermal heating

Since the Simon Power Plant is currently on track to reach its capacity for steam and electricity by 2023, an Energy Transition Plan and committee were organized to seriously address the future energy needs of the campus.

Therefore, energy needs will continue to be a critical campus priority heavily impacting the future status of the university.

References

Weil, C. to MSC, June-July 1903, Box 826, Folder 106, Power Plant, Collection UA 4.9.1, Michigan State University Archives and Historical Collections, East Lansing, Michigan.


Timeline

• Phase I 1855-1900
  February 12, 1855: College is founded
  1865-1881: Wood burning stoves, kerosene lamps
  1889: College Hall’s inadequate furnaces abandoned in favor of classroom stoves
  1881: Centralized Steam heat and telephone arrive on campus
  1884: Old Boiler House erected
  1890: Power Plant building constructed
  1892: 25 kerosene lanterns installed on walkways
  1895: Electric light plant installed, lights placed on trees and posts

• Phase 2 1900-1925
  1900: 1¼ mile railroad track built to transport coal to Old College Power Plant
  1903: Enlargement of heating plant, allowed for 25% increase of capacity
  1904: Power House (Heating and Lighting Plant) erected
  1921: North Power Plant built (now site of Administration building)
  1924: Power House for central campus heating completed

• Phase 3 1925-1955
  1929: Great Depression reduces enrollment and building resources, little construction on campus through WWII
  1941-1945: WWII creates energy and food shortages, expansion of power plant desperately needed
  1948: Shaw Lane Power Plant erected

• Phase 4 1955-Present
  1965: Theodore B. Simon Power Plant erected (or Power Plant 65)
  1969: Michigan Air Pollution Control Commission issues Simon Plant its first of several air pollution violations
  2008: Simon Power Plant implements experimental use of bio-fuels
  2010: MSU Beyond Coal Movement initiated

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